applied to the GRII Stent (modified form of FlexStent) significantly increase resistance to collapse pressure. Little is known about differences in resistance to collapse between coil and slotted tube stents. We evaluated *in vitro* the ability of 3.0 mm diameter coil stents (FlexStent, GRII, Wiktor, Wiktor-i (Medtronic)) and slotted tube stents (Palmatz-Schatz (Johnson and Johnson), BeStent (Medtronic), NIR Stent (Boston Scientific) to resist increasing circumferential pressures and determined the threshold for stent collapse. A sealed pressure chamber, suspended silicon elastic tubing containing expanded coronary stents, and high resolution pressure manometer were used to evaluate flow through stents as external pressure was increased. Collapse threshold pressure (pressure at which flow through the stent decreased by 10%) and collapse slope (rate of flow decay at increasing pressures in excess of the collapse threshold pressure) were compared between the two groups. Differences between members of each stent group were evaluated.

Results: Collapse pressure was not significantly different between coil and slotted stent groups (1874 ± 331 mmHg vs. 1829 ± 222 mmHg, p = 0.94) and collapse slope was also similar (p = 0.54). However, collapse pressures between different stents within the same group were statistically significant. The best performing coil stent had crush resistance properties equal to those of the best performing slotted tube stent.

Conclusion: Coil and slotted tube coronary stent designs provide similar resistance to collapsing pressures. Variations in collapse resistance within each stent group confirms the importance of design and engineering in determining stent performance.

1163-86 Influence of Stent Design on the Relationship Between Acute Gain and Late Luminal Loss

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Background and Methods: The proportional relationship between vessel wall injury and late luminal loss, common to all recanalization devices, is best appreciated in coronary stenting, where 1/ elastic recoil and vessel shrinkage are minimised, and 2/ vessel damage is dictated by luminal gain and stent design. On these grounds, we compared the long-term results of 4 different stent designs using the angiographic gain-loss relationship (GLR) in 523 lesions successfully stented at our Institution, with routine angiographic follow-up and full QCA completed. Concomitant lesion debulking, >1 stent design per lesion and total occlusion were exclusion criteria. Three balloon expandable -slotted tube (n = 331), coil (n = 85), and corrugated mesh (n = 70)- and a fourth self expandable mesh (n = 37) stent designs were compared. The statistics included: 1/ linear regression analysis of GLR; 2/ ANOVA of luminal loss between stents within each quartile of luminal gain; and 3/ multiple regression analysis for multivariate modelling and adjustment to other variables (vessel size, stent length).

	Gain (mm)	Loss (mm)	r	p	RR
Coil	1.96 ± 0.46	1.01 ± 0.82	0.00	NS	46%
Slotted tube	2.11 ± 0.58	0.71 ± 0.77	0.18	0.0009	20%
Corrugated mesh	2.33 ± 0.50	0.66 ± 0.60	0.36	0.001	10%
Self-expandable	2.35 ± 0.55	1.42 ± 0.97	0.42	0.008	49%

r = regression coefficient of GLR. RR = restenosis rate (>50% DS)

Analysis per quartiles revealed significant differences in loss between designs in all ranges of luminal gain. Multivariate analysis identified stent design, vessel size, MLD pre, luminal gain and stent length as variables with independent predictive value for luminal loss and MLD at follow-up.

Conclusions: Stent design strongly influences luminal loss and restenosis rate. Deviations in GLR pattern observed in the coil and, to a lesser extent, in the slotted tube designs may indicate additional mechanisms of luminal loss (ie. plaque protrusion between struts or central articulation, stent compression) to neointimal hyperplasia formation.

1163-87 Initial and Long Term Evolution of Diabetic Patients Treated With Coronary Stenting

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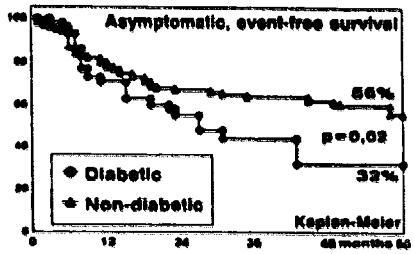
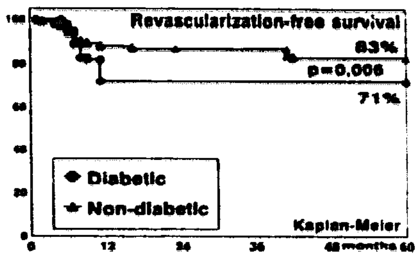
Background: Data are scant regarding the clinical and angiographic evolution of diabetics patients undergoing coronary stenting (S).

Methods: To assess the influence of diabetes we compared the initial and long-term evolution of 522 consecutive stented pts. Group A included 65 diabetic pts (63 ± 9 yr., 82% male) and group B was formed by 457 non-diabetic pts (61 ± 11 yr, 88% male). Smoking was more frequent among pts from group B (63% vs 37%, p < 0.001) whereas diabetics had a higher incidence of hypercholesterolemia (49% vs 36%, p = 0.04), multivessel disease (80% vs 57%, p < 0.01) and lesions type B2-C (68% vs 49%, p < 0.01).

Results: Initial success was similar in both groups (A: 92%, B: 93%). At 6 months freedom from angina or major events was also similar (A: 81%, B: 78%). Restenosis was more frequent among diabetics (34% vs 20%, p = 0.01). At the end of follow-up (95% of pts at 27 ± 15 months) mortality was similar (A: 10%, B: 5%, p = 0.3) but diabetics had a worse evolution.





Conclusion: The worse profile of diabetics does not influence initial and six-month clinical evolution after S. However, in the long-term diabetic pts have an unfavorable outcome.

1163-88 Clinical Outcome of Diabetic Patients After Palmaz-Schatz Stent Implantation

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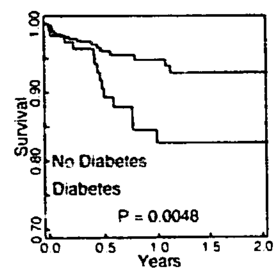
It has been previously demonstrated that diabetics have worse outcomes after PTCA compared to non-diabetics. The purpose of this study was to investigate the clinical outcome in diabetic patients after Palmaz-Schatz (PS) stent implantation. Patients who underwent PS stent implantation between January 1, 1994 and December 31, 1996 were included in the study. Of 734 total patients, 179 (24.4%) were diabetic. Baseline characteristics were similar for both groups except hypertension and CHF both of which were more prevalent in the diabetic group (p < 0.001 and p = 0.008 respectively). Vessel characteristics were also similar for the two groups with an average reference vessel diameter of 3.1 ± 0.6 mm. Multi-vessel disease was also slightly more common in the diabetic group (57.7% vs. 66.9%, p = 0.033). Success rates for stent implantation were similar (average 98.7%). In hospital rates of MI and CABG did not differ significantly but there was a strong trend towards a higher mortality in the diabetic patients (2.2% vs 0.5%, p = 0.064). Follow-up revealed a significantly higher mortality for patients in the diabetic group as compared to the control group.

There were 16 deaths in the control group (4.6%) vs. 15 in the diabetic group (12.5%) (p = 0.003)



Conclusion: Despite similar procedural success rates and in hospital complications, diabetics had a significantly higher mortality after stent implantation than the control group at follow-up.

WEDNESDAY POSTER